DOCUMENT RESUME

ED 309 443 CS 212 001

AUTHOR Friedman, Sharon M.; And Others
TITLE Nuclear Bashing in Chernobyl Coverage: Fact or Fiction?
PUB DATE 11 Aug 89
NOTE 38p.; Paper presented at the Annual Meeting of the Association for Education in Journalism and Mass Communication (72nd, Washington, DC, August 10-13, 1989).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Broadcast Television; Foreign Countries; Hazardous Materials; Mass Media Role; Media Research; *News Media; *Nuclear Energy; *Nuclear Power Plants; Nuclear Technology; *Press Opinion; *Public Health
IDENTIFIERS *Chernobyl Accident; Media Bias; *Media Coverage; News Topics; Topic Selection; USSR

ABSTRACT

Critics of coverage of nuclear power have charged that the media overemphasize the importance of nuclear accidents, encourage public fear, and omit information vital to public understanding of nuclear power and risk. Some also feel there is an anti-nuclear bias among reporters and editors. A study was conducted to determine if such charges were supported in the first two weeks of coverage of the Chernobyl accident. Coverage was analyzed in the "New York Times," the "Washington Post," the "Philadelphia Inquirer," the "Wall Street Journal," the Allentown (Pennsylvania) "Morning Call," and on the evening newscasts of CBS, NBC, and ABC. Findings showed that (1) despite heavy coverage of the accident, no more than 25% of any newspaper's or network's coverage--often far less--was devoted to information on safety records, history of accidents, and current status of nuclear industries in various countries; (2) even though such information would be background information for a breaking news event, not enough was provided to improve the public's level of understanding of nuclear power or put the Chernobyl accident in context; and (3) articles and newscasts balanced use of pro- and anti-nuclear statements, and did not include excessive amounts of fear-inducing and negative information, indicating that these newspapers and networks did not take advantage of the accident to attack or "bash" the nuclear industry or nuclear power in general. (Four tables of data and 20 notes are included.) (Author)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED309443

NUCLEAR BASHING IN CHERNOBYL COVERAGE: FACT OR FICTION?

Sharon M. Friedman, Carole M. Gorney and Brenda P. Egolf
Department of Journalism and Center for Social Research
Lehigh University
Bethlehem, PA 18015

Paper presented to session on "Science Journalism: Facts and Values," sponsored by the Magazine Division and the Science Writing Educators Group, AEJMC Convention, Washington, D.C., August 11, 1989.

CS212001

BEST COPY AVAILABLE

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Sharon Friedman
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☐ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ABSTRACT

NUCLEAR BASHING IN CHERNOBYL COVERAGE: FACT OR FICTION?

Sharon M. Friedman, Carole M. Gorney and Brenda P. Egolf
Department of Journalism and Center for Social Research
Lehigh University, Bethlehem, PA 18015

Critics of coverage of nuclear power have charged that the media overemphasize the importance of nuclear accidents, encourage public fear and omit information vital to public understanding of nuclear power and risk. Some also feel there is an anti-nuclear bias among reporters and editors. This study attempted to determine if such charges were supported in the first two weeks of coverage of the Chernobyl accident. Coverage was analyzed in the New York Times, the Washington Post, the Philadelphia Inquirer, the Wall Street Journal and the Allentown (Pa.) Morning Call and on the evening newscasts of CBS, NBC and ABC.

Despite heavy coverage of the accident, no more than 25 percent of any newspaper's or network's coverage--often far less --was devoted to information on safety records, history of accidents and current status of nuclear industries in various countries. Even though such information would be background information for a breaking news event, not enough was provided to better the public's level of understanding of nuclear power or put the Chernobyl accident in context. Articles and newscasts balanced use of pro- and anti-nuclear statements, and did not include excessive amounts of fear-inducing and negative information, indicating that these newspapers and networks did not take advantage of the accident to attack or "bash" the nuclear industry or nuclear power in general.

* * *

Paper presented to session on "Science Journalism: Facts and Values," sponsored by the Magazine Division and the Science Writing Educators Group, AEJMC Convention, Washington, D.C., August 11, 1989

NUCLEAR BASHING IN CHERNOBYL COVERAGE: FACT OR FICTION?

Sharon M. Friedman, Carole M. Gorney and Brenda P. Egolf
Lehigh University, Bethlehem, PA 18015

Many people, including communications researchers, government officials and even laypersons, have criticized news media coverage of technological and natural disasters. The media have been faulted for stressing conflict over substance, events over issues and speed over accuracy. The criticism has been particularly vehement when it comes to coverage of accidents at nuclear power plants.

Industry supporters and scholars alike have charged that the media overemphasize the importance of nuclear accidents regardless of their severity (1), engage in "atom angst," which generates a public fear of all things nuclear (2) and present the extreme positions in the nuclear debate (3).

In terms of omission, critics have stressed that news coverage of information vital to the public's understanding of nuclear power and risk is either skimpy or missing altogether. Radiation coverage of the accident at Three Mile Island (TMI) was judged as "abysmally inadequate" by the presidential commission that studied the accident (4). Nor had it improved very much two years after the accident in six newspapers published in the region surrounding TMI (5). We also found a lack of adequate radiation and risk information in an earlier content analysis of Chernobyl coverage (6).

More problematic for the nuclear industry is what many view

as an anti-nuclear stance generated by liberal leanings of reporters and editors. Rothman and Lichter identified what they considered high degrees of skepticism about nuclear energy among science journalists, journalists in the prestige press and reporters and producers in television. They found a high correlation between this skepticism and political liberalism (7).

When ABC broadcast its controversial three-hour documentary "The Fire Unleashed" less than a year before the Chernobyl accident, the Atomic Industrial Forum (AIF), as the nuclear industry trade association was named at that time, charged that both open and subliminal techniques were used to drive home an anti-nuclear, anti-technology message. The AIF further complained that use of pro- and anti-nuclear facts and sources was not balanced. "A predominant technique is to present the anti-nuclear idea, permit a nuclear spokesman or official to say a few words in defense, then demolish the defense with a torrent of criticism or opinion, or worse, opinion presented as if it were fact (8)."

A former news broadcaster turned nuclear power plant spokesperson observed that "Chernobyl gave journalists a fresh excuse to continue glamorizing the anti-nuclear power people and their misleading views--as long as the anti-nuke people remain good for sensational copy. Given the journalistic mind-set against nuclear power, that should be a long time (9)."

As in most matters, there is room for disagreement on how well the news media have covered nuclear power stories, particularly Chernobyl. The Potomac Communications Group, a Washington, D.C.-based media analysis service, observed regarding Chernobyl

coverage that the prestige press "avoided the biggest pitfalls and presented a judicious, thoughtful view of whatever facts could be known at the time." The Group was not as kind to television, however, charging that the networks hyped the story, using the most extreme fatality figures available and the strongest speculation (10).

Even the AIF concluded shortly after the Soviet accident that both the print and electronic media, with few exceptions, provided fair reporting of Chernobyl with only few excesses (11). Tempering its assessment a year later, AIF commented, "But overall, the very nature of the competitive media has kept criticism of nuclear power before the public, not its achievements (12)."

When Chernobyl occurred, the news media had had seven years since TMI to digest all the criticisms and alter their performance. To evaluate the status of nuclear power reporting in at least some of the nation's most prestigious media outlets, we conducted a content analysis of selected print and broadcast coverage of the Chernobyl accident.

As noted before, in an earlier paper, we evaluated coverage of radiation information, health and environmental risks and concluded that "the press and television did not provide enough radiation or risk information in their coverage of the Chernobyl accident, but what they did provide was appropriate, even-handed and conservative (13)."

This study concentrates on the issue of nuclear bashing. We looked at several questions. Would reporters and editors take advantage of Chernobyl to attack the nuclear industry? Would they provide even-handed or heavily anti-nuclear coverage? How

much and what kind of information would they provide on nuclear industries in various countries that were involved? Last, would readers and viewers get enough information with which to evaluate a nuclear industry's current and past performance.

Analyzing such coverage is not just an academic exercise, for media coverage of nuclear accidents has serious implications. A number of studies have shown that mass media coverage is one of the two most important factors contributing to how people form perceptions about risk (14). The coverage influences public opinion and public opinion influenced by fear can result in overestimation of risk. Such overestimations can eventually lead to greater government regulation that can cost dearly in terms of time, money and lost competitiveness.

RESEARCH METHODS

This study covers the first two weeks after the Chernobyl accident, starting with the evening of April 28 for television and the morning of April 29 for newspapers, and concluding on May 12. Because of financial constraints and problems in obtaining complete collections of articles, the study was limited to five newspapers and to the early evening newscasts of the three major television networks. The time period was selected to include coverage of the story as it broke and as it evolved.

The New York Times, Washington Post and Philadelphia Inquirer were selected to represent the prestige media, with each bringing a different perspective. The Times has a large contingent of foreign correspondents and science writers and is consid-

ered the U.S. newspaper of record; the Post brings the political flavor of Washington, D.C., and the Inquirer has shown a special interest in nuclear power since winning a Pulitzer Prize for its coverage of the TMI accident. The Wall Street Journal presents more of a business viewpoint, while the Allentown (Pa.) Morning Call, a medium-sized daily that is part of the Times-Mirror chain, represents smaller hometown newspapers. All articles written by these newspapers about the Chernobyl accident during our two-week time frame were analyzed.

Videotapes of the ABC, NBC and CBS newsprograms were obtained from the Vanderbilt University television archives. Two of the 45 newscasts aired during the study period were missing and not coded.

Because part of our goal was to compare newspaper and television coverage on the same items, we made coding categories as parallel as possible. For example, we treated television segments as comparable to paragraphs in a newspaper article and the opening statement of the television story as headlines and subheadlines. A segment of a television broadcast was considered to begin with each new speaker. So a newscast starting with a statement by an anchorperson, switching to a reporter in the field, and then switching to an expert source would have been counted as having three segments. Each segment averaged about 45 seconds.

The Chernobyl accident affected not only the U.S. and Soviet nuclear industries, but also those in Eastern and Western Europe. Therefore, we analyzed how the information provided in the U.S. coverage related not only to the U.S. nuclear industry but to

those in the Soviet Union and Europe as well.

Considering this was coverage of an accident, one would not expect "good news" about nuclear power to emanate from the media. Their focus would most likely be on past safety records, previous accidents, the status of the nuclear industry (good or bad) in a particular country or region, criticisms and attacks against the industry, calls for change and the need for additional government controls. They also probably would recall past accidents at particular nuclear power plants.

To look at these factors, we recorded any reference to or information about them for the United States, the Soviet Union, Eastern Europe and Western Europe. We made no attempt to categorize whether such references were positive or negative for the industry. When appropriate, we counted paragraphs or segments and coded them into three categories: 1-2, 3-5 or 6 or more paragraphs or segments. Several measures were coded based on mentions of at least one sentence. Passing mentions of only several words were not coded. For most measures, we looked for differences in the frequencies, percentage of total coverage and depth of coverage among the various newspapers and television networks.

Five undergraduate students and two research assistants coded the Chernobyl articles and newscasts after a number of training sessions. Intercoder reliability tests averaged 90.7 percent for the measures discussed.

RESULTS

During the first two weeks of the Chernobyl accident, 394

articles appeared in the five newspapers and there were 45 newscasts on the three networks, 43 of which were included in this study. The majority of articles appeared in the three prestige newspapers while the three networks broadcast a similar number of newscasts as shown in Table 1.

Although a significant number of articles were written on Chernobyl by the five newspapers under consideration, not much information dealt with the nuclear industry or nuclear power in general. At no time did more than 25 percent of the total newspaper coverage include information specifically dealing with nuclear power plants (other than Chernobyl), their safety records, accident histories, current status, attacks or calls for increasing government regulation. For a number of measures, less than 10 percent of the total coverage was involved.

Television was even skimpier in providing coverage of the nuclear industry. Despite extensive airtime devoted to Chernobyl--222 minutes during the first week--for any measure, no more than nine (21 percent) of the 43 newscasts contained any information related to the nuclear industry or nuclear power. Usually the number of newscasts involved for a measure was only two or three.

This paucity of coverage about nuclear power and the nuclear industry should not be very surprising, however. The main focus of the Chernobyl story was the accident itself and radiation fallout concerns. Even radiation information only appeared in 184 or 46.7 percent of the newspaper articles and 60 percent of the 43 television newscasts (15). The drama was the accident and the actual or potential victims. Numbers of studies of techno-

logical disasters have shown that contextual, long-range issues--such as how the Chernobyl accident would affect the nuclear industry--are not the media's immediate concerns (16, 17).

Only 10.4 percent or 41 articles had as their primary subject the effect of the Chernobyl accident on or comparisons with the U.S. nuclear industry. Four articles had this subject as the secondary focus of the story. One might expect that as the Soviets got the accident under control, the emphasis might shift away from victims and accident details to more long-term consequences. However, at least with articles dealing with consequences for the U.S. nuclear industry, this was not the case. Twenty-eight appeared in the first week's coverage, while 13 appeared during the second week. None of the newscasts had Chernobyl's effect on or comparison with the U.S. nuclear industry as either their primary or secondary focus.

Safety Records and Past Accidents

When a reporter deals with a negative event or situation, he or she usually includes any past record of similar occurrences. This provides information about whether this event is an unusual situation or one in a pattern of problems. When the media report about public officials, they look at their history and voting records; when they report about Congress, they include information about what happened in the past. Even when they report about chemical spills, they usually look to see if the company involved has had a history of such occurrences. Therefore, one would expect that with an accident such as Chernobyl, the media would report on the safety records and accident histories of the

industry involved not only in the Soviet Union, but also in the United States and throughout Europe.

The most information included about safety records or previous accidents was for the United States. Although Chernobyl was a Soviet accident and concentrating on the Soviet nuclear industry might have been more appropriate, the U.S. media chose to emphasize the U.S. situation. This is not surprising since information about the American nuclear industry is not difficult to obtain and comparisons between the Soviet and U.S. nuclear industries were inevitable. What is surprising is that there was not more coverage. Only 22.6 percent of the newspapers articles (89 articles) included it. And 56 of these included only a brief mention of 1-2 paragraphs. Only 23 articles contained information that was 3-5 paragraphs long and 10 included information that was six or more paragraphs in length.

As can be seen in Table 2, the Philadelphia Inquirer ran the most references in 28 articles, but this was only two more than the Post and nine more than the Times. The Inquirer and the Post devoted about the same percentage of their total coverage to referring to information about past history and previous accidents, while the Times' percentage was quite a bit lower. The Journal and the Call ran a smaller number of articles with such information but these articles represented a greater proportion of their total coverage. This trend will continue throughout these data and clearly is related to the small numbers of articles each of these newspapers published on Chernobyl. However, since we are dealing with the universe of such articles during

this time period for these newspapers, the percentage of total coverage they devoted to various issues is an important factor. Particularly noteworthy is the proportion of such information in the Call, appearing in 47.4 percent of its coverage.

The Inquirer not only had the most articles, but they were also the longest, representing 43.5 percent of the 3-5 paragraph stories and 50 percent of those of 6 or more paragraphs.

Eight newscasts (18.6 percent) included this information. As can be seen from the table, CBS aired half of them, including one that was 6 or more segments long.

Despite the emphasis on the U.S. nuclear industry, since this accident occurred in the Soviet Union, one would expect something published about the history of its nuclear industry. Balancing that expectation, however, is the secrecy surrounding nuclear power in general in the Soviet Union before the Chernobyl accident. While we do not know the lengths to which the media went to get background information about past accidents or the safety record of nuclear power in the Soviet Union, we found information on it in only 6.1 percent of the articles. Of these 24 articles, 21 included references that were 1-2 paragraphs. The Inquirer had references in eight stories, the Times, seven, the Post, four, the Journal, three, and the Call, two. Two of the Inquirer's references were more than six paragraphs. The Journal devoted the greatest proportion of its coverage to including these references, 12 percent, followed by the Call with 10.5 percent and the Inquirer with 7.1 percent.

Again, only 18.6 percent or eight newscasts contained references to nuclear records or to previous accidents, this time for

the Soviet Union. Seven of these contained only 1-2 segments of such information and there was little variation among the networks.

For the Soviet Union, also of concern was whether the articles included information as why nuclear plants were economically or politically important for that nation. Only 21 articles (5.3 percent) included such information and 13 of the references were only 1-2 paragraphs. Here, the Times had the most references--10 out of 21. Only three newscasts provided information on the Soviet situation and these were all only 1-2 segments.

Information about why the Soviets had used a graphite reactor design rather than another type also could cast light on nuclear operations in that nation. Despite this being an important part of the accident scenario, only seven articles included such information and all were only 1-2 paragraphs. Four of these references were in the Times. One newscast on NBC provided 1-2 segments on this information.

While Eastern and Western Europe's nuclear plants were not directly involved in the accident, concerns over radioactive fallout experienced by some of the nations brought up the issue of their nuclear industries' situation.

Only three articles (0.8 percent) appeared about Eastern Europe's nuclear industries' safety records or past accidents, while 16 (4.1 percent) provided information about similar factors for Western Europe's plants. Three-quarters of the Western European references were only 1-2 paragraphs. Six articles included such information in the Post, five in the Inquirer, three in the

Times and two in the Call. None appeared in the Journal. The Call again devoted a greater percentage of its coverage, 10.5 percent, to this issue than the other newspapers. It also ran one of two articles that included at least six paragraphs on this subject; the other was in the Times. Although it may be only a reflection of the small number of total articles in the Call, its coverage of the safety records and accident histories in the United States, the Soviet Union and Western Europe represents a larger percent of its coverage than that of all of the other newspapers.

On television, the safety records of Europe's nuclear industries were largely ignored. No newcasts contained references to any Eastern European situation and references about Western Europe appeared as 1-2 segments each in only two newscasts (4.7 percent). One was on CBS and the other on NBC.

Considering that the Windscale accident, which occurred in Great Britain, was similar to the Chernobyl accident; that nuclear experts from various European countries were being called on for help with the graphite fire by the Soviet Union, and that there were some very good and bad operating histories throughout Europe, one would have expected more coverage. Information in Western Europe was easy to find. Publications there, particularly in Germany and Austria, have written extensively about nuclear power issues in their countries. To account for the lack of information, we can only speculate that U.S. reporters did not follow nuclear issues in Europe and that foreign correspondents for U.S. newspapers did not consider nuclear power a major coverage area and did not know much about the subject.

Current Status

It would not be balanced to include information about past accidents and safety records if no information was included about the current status of the nuclear industry in each of the countries or regions. Therefore, we searched the newspapers and television newscasts for references that could tell readers and viewers how the industries were currently faring. Again, we made no attempt to decide whether this information was favorable or negative.

Only 11.4 percent of the newspaper coverage included such information on the status of the U.S. industry--45 articles. This is about half the number of articles written about the past history or accident records of U.S. nuclear plants. Of those discussing the current status, 27 included references that were 1-2 paragraphs long, but 11 were six or more paragraphs. About 42 percent (19) of all of these references appeared in the Inquirer, representing 17 percent of its coverage. Four of these were 6 or more paragraphs. The Times ran 10 articles (7.6 percent of its coverage) while the Post printed nine (8.5 percent). However, the newspaper that provided the largest percentage of its coverage on this issue was the Journal, with 28 percent or seven articles. The Call ran none.

Only 29 references appeared on the current status of the Soviet nuclear industry; this represented five more references than had been made for past safety or accident history. The Inquirer printed 12 (10.7 percent of its coverage) of these, but most were only 1-2 paragraphs. The Times ran nine references;

four of these were 6 or more paragraphs. The Post had four references, the Journal, three, and the Call, one. The Journal once again devoted more of its coverage to this measure than the other newspapers--12 percent.

Five articles included references about the current status of Eastern European nuclear industries, while 18 referred to those in Western Europe. These too were slightly more than the references made for both regions about accident histories. The Times, Post and Inquirer printed around the same number for Western Europe, between 5-6 articles. The Journal ran two references for the largest percentage of coverage, 8 percent.

Four newscasts or 9.3 percent discussed the current status of the U.S. nuclear industry and four included information on the current status in the Soviet Union. Of these eight, only one was longer than 1-2 segments. CBS aired half of the newscasts and the rest were evenly split between NBC and ABC. Only one newscast on CBS referred to Eastern Europe's current nuclear status and none dealt with the status in Western Europe.

This lack of coverage of the current status of the nuclear industry in any of the countries or regions involved was not helpful for readers or viewers concerned about the safety of nuclear power. Concentrating on safety records and past accidents was potentially misleading because changes had been made by the U.S. industry, particularly after the accident at TMI, to provide more rigorous attention to safety factors. Yet twice as much information about U.S. past accidents and safety records was published and broadcast than about the current situation. This was not the case with information about the Soviet and European

industries, but this was probably not due to concern over balance in coverage between the past and present situations. More likely is was because less was known about their histories and therefore reporters scrambling to cover the story only dealt with what was currently the case.

Negative Information

Even when a minor nuclear accident occurs, nuclear power is usually criticized. With an accident the size of Chernobyl, the mass media could have played up numerous attacks on nuclear power as well as other factors that would work against the industry. This would be particularly true if the mass media were as anti-nuclear as some have claimed.

We looked at three measures to evaluate how much negative information the media had relayed not specifically about Chernobyl, but about nuclear power or a nuclear industry in general. Our task in trying to sort out what countries were the subjects of such negative information was complicated by combinations that sources often made in naming various nations. Therefore, we not only had to code for the standard four countries or regions, but also for various combinations of them as well as the catchall "everywhere."

About 19 percent (76 articles) of the print coverage included attacks on or criticism of nuclear power or the nuclear industry. As can be seen in Table 3, 55.3 percent of these attacks or criticisms were directed at the United States, 15.8 percent at the Soviet Union, 10.5 percent at the United States and the Soviet Union and 9.2 percent for everywhere. The Inquirer printed

the most attacks and criticisms, 25, appearing in 22.3 percent of its coverage. While the Journal published only 9 attacks or criticisms, this represented 36 percent of its coverage. The Call ran 6 attacks or criticisms, representing 31.6 percent of its coverage. Both the Times and the Post included various attacks and criticism in about 15 percent of their coverage.

Around 17 percent (68 articles) of the total coverage included information that changes should be made or need to be made in the nuclear industry. Again, the majority of these references, 51.5 percent, were directed at the United States, with 14.7 percent for the Soviet Union and 22.1 percent for everywhere. The Inquirer ran the most articles that included this information, 23, which was 20.5 percent of its coverage. The highest percentage of coverage appeared in the Call, 31.6 percent (6 articles), followed by the Journal, 28 percent (7 articles). The Post included calls for change in 17 percent of its coverage (18 articles), while the Times included them in about 10.6 percent of its coverage (14 articles).

The last negative measure related to calls for additional government regulation of either nuclear power or the nuclear industry. Only 35 articles included such calls, with 57.1 percent of these directed toward the United States, 11.4 percent toward the Soviet Union and 20 percent for everywhere There was not much difference among the major newspapers, but once again the Inquirer had the most articles with such calls, 10, compared to 9 for the Post and 8 for the Times. The Journal and the Call each had four. The Call led the percent of coverage with 21.1

percent, followed by the Journal with 16 percent, the Inquirer with 8.9 percent, the Post with 8.5 percent and the Times with 6.1 percent.

The vast majority of newscasts did not include attacks or calls for changes. Attacks against or criticism of the nuclear industry appeared in only two newscasts for the United States and one for the Soviets. Thirty-eight newscasts or 88.4 percent contained no attacks or criticism at all. Changes called for in the nuclear industry were discussed in only one newscast and referred to the United States. Calls for more government regulation appeared in only two newscasts, one of which dealt with the United States.

Considering the major impact of the Chernobyl accident, one would have expected more articles and newscasts to contain these negative aspects, particularly if the pro-nuclear critics of the media were correct. That not being the case, one still has to remember that although there were only a small number of negative comments, more than half of those appearing in newspapers were directed at the U.S. nuclear industry, which was not responsible for the Chernobyl accident. Although this may have been because both reporters and their sources knew more about the American nuclear industry than about its counterparts in the Soviet Union and Europe, somewhat more negative information about the U.S. industry appeared than seemed called for given the situation.

It is also interesting to note that while 76 articles included attacks or criticisms and 68 called for change, only 35 called for additional governmental regulation. This was much milder than what occurred during and after the TMI accident. One

could speculate that the lack of proximity and immediate danger for U.S. citizens played a factor or this also could reflect a cynical feeling that increased government regulation does not seem to stop such accidents.

Fear Factors

In addition to negative information, we also looked at several factors, beyond radiation reporting, that could induce fear of nuclear power in readers and viewers. (We exempt radiation reporting because we have already reported on it elsewhere and its fear-inducing elements not only involve the nuclear industry but also many other factors.)

One of the factors we looked at was whether headlines in the various newspapers would make readers fear nuclear power. Although this is a subjective judgment, the answers seemed quite conclusive and somewhat surprising. About 75 percent of the headlines were judged as not causing any fear of nuclear power, while only about 15 percent were considered as positive fear inducers. Some of the headlines, 10.4 percent, were considered not clear in this factor. Of the 57 headlines that were judged to induce fear of nuclear power, 22 appeared in the Inquirer, 18 in the Times, 12 in the Post, 4 in the Journal and 1 in the Call. About 20 percent of the Inquirer's total headlines were considered positive fear inducers, along with 16 percent of the Journal's, about 14 percent of the Times', about 11 percent of the Post's and around 5 percent of the Call's.

Opening statements were coded in place of headlines for television. Twenty-one newscasts (49 percent) were judged as

having openings that would not induce fear of nuclear power, while only 6 (13.9 percent) were considered as fear inducing. Another 37 percent were not clear about this.

We also considered mention of the TMI accident as a factor that could make people fearful of nuclear power since it had happened in the United States and been covered heavily by the mass media. Although there are few proven health effects from the escape of radiation at TMI, the accident is still considered a major disaster by many citizens in the United States. Reminders of it could recall for readers and viewers fear of nuclear power activities in the United States.

Eighty-eight articles (22.3 percent) mentioned the TMI accident. The majority of these references were 1-2 paragraphs, but 17 were 3-5 paragraphs long and three were 6 or more. As can be seen in Table 4, 30 of these references, including two of the three long ones, appeared in the Inquirer. This represents 34.1 percent of all of the references to TMI in these newspapers, while the Post followed closely with 30.7 percent (27) of the references to TMI. In this instance, the Inquirer even surpassed the Journal and the Call in devoting the greatest percent of coverage, 26.8 percent.

TMI was mentioned in eight newscasts (18.6 percent), half of which were aired on CBS. That network aired one reference that was 6 segments or longer, one of 3-5 segments and two 1-2 segments. NBC ran 1-2 segments on three of its newscasts.

Discussion of a U.S. nuclear plant that had a graphite reactor similar to Chernobyl also was considered a potential fear-

inducing factor, so references to the Hanford reactor in the state of Washington also were measured. Only 23 articles (5.8 percent) mentioned Hanford, but six of these references were 6 or more paragraphs. As shown in Table 4, the Times printed eight (34.8 percent) of the references, while the Inquirer ran seven (30.4 percent). The Call devoted the greatest percentage of its coverage, 10.5 percent, followed by the Journal with 8 percent.

For comparison, other U.S. nuclear reactors were mentioned in 45 articles (11.4 percent), with 15 of these references being six or more paragraphs. Table 4 shows that the Inquirer and Times each had 13 references (28.9 percent). The Journal included such references in 28 percent of its total coverage and the Call did so in 21 percent. Four references of six or more paragraphs were found in each of the three large newspapers.

Hanford was included in coverage in only two newscasts, one each on ABC and NBC. ABC devoted 3-5 segments to the subject, while NBC only showed 1-2 segments. Other U.S. nuclear reactors were discussed in only one newscast on NBC for 1-2 segments.

Based on these measures, it does not appear that the media overplayed any fear-inducing factors that would raise risk expectations of their readers and viewers, perhaps with the exception of raising the specter of the TMI accident. Even there, however, less than 25 percent of the coverage concerned TMI and the majority of references were only one or two paragraphs.

Pro- and Anti-Nuclear Commentary

Another way to measure whether the newspapers and television networks in this study were biasing their coverage in an anti-

nuclear fashion, is to look at whether they balanced their use of pro- and anti-nuclear information sources.

The incidence of use of sources that could be readily identified as pro- or anti-nuclear was relatively small. Pro-nuclear sources provided statements in 34 articles. Of these, 19 of them (55.9 percent) were matched with a statement by an anti-nuclear source. The Inquirer had the most statements involving pro-nuclear sources (12) and, of these, two-thirds were matched. The only newspaper to use more non-matched than matched references for pro-nuclear statements was the Post.

Forty-seven articles contained statements from anti-nuclear sources. That represents such statements in 11.9 percent of the total coverage versus 8.6 percent for pro-nuclear sources. Of these 47 statements, 25 or 53.2 percent were matched with a statement from a pro-nuclear source. The Inquirer once again had the most statements, 21; of these 11 were not matched and 10 were. The Times had 6 not matched and 5 matched; all of the others had more several more matched than non-matched statements in articles.

Providing balance does not just mean matching quote for quote, it also means providing a similar amount of space. Forty percent of 30 articles where opposite viewpoints were given had approximately the same amount of space for each point of view. About 37 percent gave more space to the anti-nuclear view, while 23.3 percent gave more space to the pro-nuclear view. Except for the Journal, all of the other newspapers had several more unequally than equally balanced articles relating to space, with the Post and the Inquirer each providing a few more articles that

gave the anti-nuclear view more space.

Pro-nuclear statements on television were identified in only 17 newscasts (about 39.5 percent), with nine balanced by an anti-nuclear statement. Anti-nuclear opinions were used in 11 newscasts (25.6 percent), with seven balanced with pro-nuclear statements. Four newscasts (three on NBC) provided more time to the pro-nuclear view point and five (three on CBS) gave more time to the anti-nuclear position.

While it appears a few more readily identifiable anti-nuclear sources were used, their statements were balanced by pro-nuclear statements about as often as pro-nuclear source statements were countered with those from an anti-nuclear source. Even regarding airtime or newspaper space, the pro- and anti-groups appeared to receive about equal treatment, indicating balanced coverage from this perspective.

Differences Among the Newspapers

In trying to decide which newspaper provided the most coverage of nuclear power issues and the nuclear industry, one has to evaluate this in two ways. First, we have three prestige newspapers which all published about the same number of articles on Chernobyl. Then we have two newspapers which produced a much smaller number of articles. To judge based on frequencies alone would eliminate their coverage as a factor. Therefore, we will look at two aspects in making this judgment, frequencies for the larger newspapers and percentage of total coverage for all five.

Looking first at frequencies, it is clear that the Inquirer is the leader. In almost every measure, it provided more articles

with references to nuclear power or the nuclear industry than either the Times or the Post. As mentioned earlier, the Inquirer has a history of being interested in covering nuclear power. After winning the Pulitzer Prize for its coverage of the TMI accident, it has continued to follow the TMI situation very closely. In 1986, it won the Edward J. Meeman Award, one of the Scripps Howard Foundation national journalism awards, for a series on the TMI cleanup, although the series was heavily disputed by GPU Nuclear, the operator of TMI. It is not hard to conclude that for the Inquirer, nuclear power is an important issue to be followed closely. Because it does so, it was able to provide more nuclear industry background information for its readers during the Chernobyl accident.

A number of pro-nuclear organizations including GPU Nuclear have claimed that the Inquirer has an anti-nuclear bias. However, before one jumps to a similar conclusion based on this study, it should be remembered that, for some of the measures involved, no judgment was made as to whether the information provided was positive or negative about the nuclear industry. It is only with negative and fear-inducing information that we can clearly say the Inquirer presented a somewhat more negative view. It did print a few more articles than the other prestige newspapers that included attacks or criticism about U.S. nuclear power, that mentioned that changes needed to be made and that called for additional regulation. It included more articles about the TMI accident than the others (although TMI is almost a local story for this newspaper and more mention normally would be

expected) and it printed about 39 percent of the headlines that could cause people to fear nuclear power. Our earlier study of Chernobyl radiation reporting done by these publications found that the Inquirer printed more stories that had higher risk assessments, had more links between loaded words and radiation and ran more articles containing worst-case scenarios.

Based on all of these measures, a pattern does appear that indicates the Inquirer has a somewhat more anti-nuclear position than the other prestige newspapers, but it is not as strong (at least in these measures) as some pro-nuclear critics profess it to be. This mild anti-nuclear stance is further reinforced by looking at the total percentage of articles that included such references for these three newspapers. For all of the negative or fear-inducing measures, the Inquirer provided the largest percentage of its total coverage, compared to the Times and the Post. However, the strength of these anti-nuclear leanings was not shown to be that great and could even be a result of the Inquirer just providing more coverage of the nuclear industry overall.

As to the other newspapers, the Times printed the smallest number of articles with references about negative or fear-inducing information and devoted the least percentage of its total coverage to including such references. The Times also provided the lowest number of references overall concerning nuclear power and the nuclear industry in general. The Washington Post falls in the middle of the group, but, with a few exceptions, is closer to the Times in the percent of its coverage devoted to these measures.

For the Journal and the Call, in particular, looking at the percentage of coverage is important. For many measures, the Journal or the Call provided references in a larger percentage of their total coverage than did the three prestige newspapers. Clearly, the small number of Chernobyl articles they published (25 in the Journal and 19 in the Call), affects these proportions. However, it is important to remember that readers of these publications got more information about the nuclear industry and nuclear power and, in particular, more negative and fear-inducing information proportionally than did readers of the prestige newspapers. In fact, these two newspapers devoted a higher percentage of their coverage to every negative or fear-inducing measure, except referring to the TMI accident, than did any of the prestige newspapers. By this measure, both the Journal and the Call showed a stronger pattern of anti-nuclear leaning than the Inquirer, although it is still not a major factor in their coverage. This pattern possibly occurred because the larger number of articles in the prestige newspapers diluted their coverage of negative and fear-inducing factors, while the small number of articles in the Journal and Post concentrated it.

The question remains as to whether there was a better showing on covering the nuclear industry and nuclear power on the part of the Journal and the Call than the three prestige newspapers. Proportionally, the answer has to be yes, although their concentration on negative and fear-inducing information is disquieting. But beyond this is the factor of the small number of articles they printed and this overrides a positive answer. From

an overall view, looking at both frequencies and percentages of total coverage, the Inquirer comes out as providing the most coverage of the nuclear industry and nuclear power and should be commended for doing so. This commendation, however, has to be tempered with some concern over the Inquirer's mild anti-nuclear stance.

Differences Among the Networks

There were more similarities than difference in the coverage of these measures by the three television networks. What the networks had most in common was the dearth of background information on the status of the nuclear industry, and their passivity in airing any criticism against the industry, not only that in the United States but also in the Soviet Union.

CBS provided more newscasts with information than the other two networks for a number of measures, such as the mention of the TMI accident. However, 15 newscasts were analyzed for CBS and only 14 each for NBC and ABC, so the extra newscast might be a factor when dealing with frequencies. In looking at percentage of total coverage, a somewhat different picture emerges. For all measures in this study, NBC provided 9.6 percent of its coverage, compared to 7.7 percent for CBS and 5.7 percent for ABC. For information about the history and current status of nuclear industries in the various countries, CBS devoted 8.9 percent of its coverage, 8.3 percent for NBC and 4.8 percent for ABC. Fear-inducing opening statements appeared in 21.4 percent of NBC's coverage, compared to 13.3 percent for CBS and 7.1 percent for ABC. While this seems to be a major difference, we are only

talking about three fear-inducing opening statements for NBC compared to two for CBS and one for ABC.

Because the numbers and differences are small, it is difficult to detect any trends among the networks. CBS provided more references in newscasts on some issues--particularly those relating to the status and history of nuclear industries. Yet NBC provided more percentage of coverage overall. The only difference that stands out is that ABC was not as active in covering these issues as CBS and NBC.

One caution about this study's findings should be made for television. Counting segments or statements does not provide the total story. Television depends heavily on pictures and sound and all these elements must be taken into account in evaluating coverage. A previous study (18) that attempted to correlate both pictures and numbers found 14 examples of inflammatory linkages between words and graphics on all three networks in the first week of coverage after the accident. Chernobyl also received an exaggerated amount of television coverage--a fact that more than one study has indicated tends to bias viewers' perceptions of risk (19).

CONCLUSIONS

It is apparent that even as a background or explanatory factor, the status of nuclear power or the nuclear power industry was not considered very important for Chernobyl coverage. That three of the nation's most prestigious newspapers did not devote more space to covering the measures discussed here is disturbing. How are readers to gain perspective about nuclear power if they

do not have background information?

Given the short timeframe for television newscasts, the networks could be considered less at fault in this situation since they have a harder time fitting in background information. However, many minutes of coverage were devoted to Chernobyl by the networks over two weeks and more information about nuclear power and the status of the nuclear industry could have been provided.

One could argue that during a nuclear plant accident is not the time to provide such background information since the focus is on other factors. Yet, it might be the best time to do so. Many more people read or view something to do with nuclear power when it involves breaking news such as an accident than at other times. Also, since an accident is "bad news," it is a mark of balanced reporting to provide additional information to put that bad news into context.

We must conclude that overall the five newspapers and three television networks did not provide enough information on these issues to help their readers or viewers evaluate the nuclear industries' current and past performance. This evidence, added to that we have already reported on lack of background information regarding radiation reporting in the Chernobyl coverage, gives us serious pause.

More and more studies dealing with coverage of both technological and natural hazards are documenting a lack of coverage of long-term issues--where, as Wilkins says, the event is the only story the media believe is worth reporting. Wilkins' comments

concern coverage by U.S. media about the Bhopal accident. But they could apply just as easily to other less serious situations regarding radon, toxic chemicals and other environmental and health hazards. Wilkins also notes that "people use media for something vital in their lives: to help them attempt to gain a sense of psychological security through the type of environmental surveillance that only the media--in this information age--can provide." She rightly points out that such surveillance is subject to nuance and that the nuance of events in Bhopal and the various decisions and events which contributed to it, were most often missing in media reports (20).

We believe that similar nuances about nuclear power and the nuclear power industry were absent from much of the coverage we analyzed concerning the Chernobyl accident. For researchers, industrial executives and government officials involved in communicating about various risks, this lack of coverage of long-term issues, background factors and the nuances of a risky situation in the mass media must be a very serious concern. Calls for change in media behavior by researchers and others have gone unheeded. Instead, information sources should learn from these studies that they must make it easy for members of the public to get such information and not depend on the mass media to convey it for them.

Although the newspapers and television networks did not provide enough information, on a more positive note, they did not advantage of the Chernobyl accident to attack the nuclear industry and the coverage they did provide was predominantly even-handed in its approach.

Of course, coverage of a major accident that killed 31 people and subjected thousands to exposure to a drifting cloud of radiation is not going to improve the image of nuclear power. Our study accepts as a given that the overall Chernobyl coverage will have made many people more fearful of nuclear power. Instead, we tried to evaluate whether the newspapers and networks we studied reinforced or added to this fear by going overboard in conveying fear-inducing and negative information on more general factors relating to nuclear power. While a mild anti-nuclear stance appears in the Inquirer and perhaps the Journal and the Call, the clear answer is that none of the newspapers or networks went overboard, as perhaps Rothman, Lichter and other pro-nuclear critics would have predicted.

Some critics would probably say the media did not have to, that the negative factors of the accident itself were enough. But to be fair, it was an excellent opportunity for bashing the nuclear industry and these media outlets did not, for the most part, take advantage of it.

One factor that could be considered as unbalanced was that they did provide more references that included attacks and criticism, calls for change and calls for additional government regulation involving the U.S. nuclear industry, even though the accident had occurred in the Soviet Union and was not connected to U.S. practices. But common sense would expect this additional scrutiny of the U.S. industry since it is more familiar and much more accessible than that in the Soviet Union or those in Europe. As we noted earlier, media coverage of nuclear accidents can have

serious ramifications, particularly if that coverage results in an overestimation of risk. While coverage of all of the factors involved in the Chernobyl accident might have contributed to such an overestimation, coverage of background factors relating to nuclear power and the nuclear industry by these newspapers and networks should not have done so. Nuclear bashing was fiction, not fact, in their coverage of Chernobyl.

REFERENCES

1. Sood, Rahul, Geoffrey Stockdate and Everett M. Rogers. "How the News Media Operate in Natural Disasters," Journal of Communication, 37(3), Summer 1987, pp. 36-37.

2. Wilkins, Lee and Philip Patterson. "Risk Analysis and the Construction of News," Journal of Communication, 37(3), Summer 1987, p. 88.

3. Patterson, Philip. "Reporting Chernobyl: Cutting the Government Fog to Cover the Nuclear Cloud," in Bad Tidings: Communication and Catastrophe, Lynne Masel Walters, Lee Wilkins and Tim Walters, eds., New Jersey: Erlbaum Associates, 1989, p. 143.

4. Report of the Public's Right to Information Task Force: Staff Report to the President's Commission on the Accident at Three Mile Island. Washington, D.C.: U.S. Government Printing Office, October 1979, p. 215.

5. Friedman, Sharon M. "Environmental Reporting: Before and After TMI," Environment, 26(10), December 1984, p. 34.

6. Friedman, Sharon M., Carole M. Gorney and Brenda P. Egolf. "Reporting on Radiation: A Content Analysis of Chernobyl Coverage," Journal of Communication, 37(3), Summer 1987, p. 58-79.

7. Rothman, Stanley and S. Robert Lichter. "The Nuclear Energy Debate: Scientists, the Media and the Public," Public Opinion, August/September 1982, p. 51.

8. Atomic Industrial Forum. Wire message to all Infowire Subscribers, #85-36, Bethesda, Md., May 22, 1985.

9. Kramer, Joe. "The Objectivity Meltdown," The Quill, March 1987, p. 12.

10. Potomac Communications Group. "Strategic Media Analysis: The Coverage of Chernobyl," unpublished report, Washington, D.C., June 10, 1986.

11. Atomic Industrial Forum. "AIF Midyear Report: Will There be Energy After Chernobyl?" Bethesda, Md., July 14, 1986.

12. Finger, Harold B. "Public Attitudes Toward Nuclear Energy in the U.S.: A Growing Recognition of Need," Paper given at International Meeting on Nuclear Communications and Public Opinion, Societe Francaise d'Energie Nucleaire, Paris, June 18, 1987, p. 4.

13. Friedman, Gorney and Egolf, p. 58

14. Everett M. Rogers, "Science Communication about Risk," Paper presented at 1988 Symposium on Science Communication: Environmental and Health Research, Annenberg School of Communication at the University of Southern California, Los Angeles, December 15-17, 1988, p. 10-11.

15. Friedman, Gorney and Egolf, pp. 61-62.

16. Wilkins, Lee. Shared Vulnerability. New York: Greenwood Press, 1987, pp. 43-68.

17. Nelkin, Dorothy. "Communicating the Risks and Benefits of Technology," Paper presented at 1988 Symposium on Science Communication: Environmental and Health Research, Annenberg School of Communication at the University of Southern California, Los Angeles, December 15-17, 1988, p. 10-14.

18. Gorney, Carole. "Numbers vs. Pictures: Did Television Sensationalize Chernobyl Coverage?" Paper presented to the annual meeting of the Association for Education in Journalism and Mass Communication, Portland, Or., July 3, 1988.

19. Mazur, Alan. "Media Coverage and Public Opinion on Scientific Controversies," Journal of Communication, 3(2), 1981, pp. 106-115.

20. Wilkins, pp. 147-150.

TABLE 1

Total Number of Articles and Newscasts on Chernobyl
from April 28-May 12, 1986

Newspaper or Network	Total Articles/Newscasts	
	n	%
New York Times	132	33.5
Philadelphia Inquirer	112	28.4
Washington Post	106	26.9
Wall Street Journal	25	6.3
Allentown Morning Call	19	4.8
TOTAL--NEWSPAPERS	394	99.9
ABC	14	32.6
CBS	15	34.9
NBC	14	32.6
TOTAL--NETWORKS	43*	100.1

*Tapes of two newscasts were unavailable and therefore not coded.

* * *

TABLE 2

References to Safety Records and/or Past Accidents of the U.S. Nuclear Industry by Newspaper or Network in Percent of Each Newspaper's Coverage and Number of Paragraphs or Segments

Newspaper/Network	References				
	total n	% of its coverage	n of para./segs. 1-2	3-5	6+
Philadelphia Inquirer	28	25	13	10	5
Washington Post	26	24.5	15	8	3
New York Times	19	14.4	15	3	1
Allentown Morning Call	9	47.4	6	2	1
Wall Street Journal	7	28	7	0	0
TOTAL--NEWSPAPERS	89	n/a	56	23	10
CBS	4	26.7	3	0	1
ABC	2	14.3	0	2	0
NBC	2	14.3	1	1	0
TOTAL--NETWORKS	8	n/a	4	3	1

TABLE 3

References that Included Attacks on or Criticisms of
Nuclear Power or a Nuclear Industry in a Country by Newspaper or Network

Newspapers/ Networks	Number of Attacks/Criticisms by Countries*										
	US	SU	EE	WE	US&SU	US&WE	SU&WE	EE&WE	EVERY	OTHER	TOTAL
P. Inquirer	15	1	0	0	5	0	0	0	3	1	25
NY Times	11	5	0	0	3	1	0	0	0	0	20
W. Post	8	3	0	2	0	0	1	1	1	0	16
W.S. Journal	4	3	0	0	0	1	0	0	1	0	9
A. Morn. Call	4	0	0	0	0	0	0	0	2	0	6
TOTAL--PAPERS	42	12	0	2	8	2	1	1	7	1	76
ABC	2	0	0	0	0	0	0	0	0	0	2
CBS	0	1	0	0	0	0	0	0	1	0	2
NBC	0	0	0	0	0	0	0	0	1	0	1
TOTAL--NETWORKS	2	1	0	0	0	0	0	0	2	0	5

* US=United States; SU=Soviet Union, EE=Eastern Europe, WE=Western Europe, EVERY=Everywhere. Other combinations of countries did not have any references.

* * *

TABLE 4

References to U.S. Nuclear Power Plants by Newspaper/Network

Newspaper/Network	References to:							
	TMI		Hanford		Others		Total	
	n	% of coverage	n	% of coverage	n	% of coverage	n	% of coverage
P. Inquirer	30	26.8	7	6.2	13	11.6	50	32.1
NY Times	21	15.9	8	6.1	13	9.8	42	26.9
W. Post	27	25.5	4	3.8	8	7.5	39	25.0
W.S. Journal	6	24.0	2	8.0	7	28.0	15	9.6
A. Morn. Call	4	21.1	2	10.5	4	21.1	10	6.4
TOTAL--NEWSPAPERS	88	n/a	23	n/a	45	n/a	156	100.0
NBC	3	21.4	1	7.1	1	7.1	5	45.5
CBS	4	26.7	0	0	0	0	4	36.4
ABC	1	7.1	1	7.1	0	0	2	18.2
TOTAL--NETWORKS	8	n/a	2	n/a	1	n/a	11	100.1